

Military turns to oyster reefs to protect against storms

December 26 2017, by Wayne Parry

Earle Naval Weapons Station, where the Navy loads some of America's most sophisticated weapons onto warships, suffered \$50 million worth of damage in Superstorm Sandy. Now the naval pier is fortifying itself with some decidedly low-tech protection: oysters.

The facility has allowed an environmental group to plant nearly a mile of oyster reefs about a quarter-mile off its shoreline to serve as a natural buffer to storm-driven wave damage.

Other military bases are enlisting the help of oysters, too. In June, environmental groups and airmen established a reef in the waters of Elgin Air Force Base Reservation in Florida, and more are planned nearby. Oysters also help protect Naval Station Norfolk in Virginia.

Three oyster reefs protect the USS Laffey museum in South Carolina. And military installations in Alabama and North Carolina have dispatched their enlisted personnel to help build oyster reefs in off-base coastal sites.

They are among hundreds of places around the U.S. and the world where oyster reefs are being planted primarily as storm-protection measures. And a bill just introduced in Congress would give coastal communities \$100 million over the next five years to create "living shorelines" that include oyster reefs.

"Having a hardened structure like that oyster reef will absorb some of

that wave energy," said Earle spokesman Bill Addison. "All the pipes and cables that are on the pier now, all of that was washed away and had to be rebuilt. And there was a lot of flooding that came into the base. Will this protect us against all of that? No, but it will do a significant amount of good to protect the base and the complex and our surrounding communities."

The NY/NJ Baykeeper group has been experimenting with oysters at the Navy pier since 2011, originally as a way to see if the shellfish, through their natural filtering ability, might help improve water quality in the murky Raritan Bay. (They did somewhat.)

In summer 2016, the group planted the oyster reef primarily as a storm protection measure—a trend that has taken hold around the world within the past decade or so, according to Bryan DeAngelis, a program coordinator for The Nature Conservancy in Rhode Island. Every coastal state in America is using oyster reefs as either a combination storm-protection or a water improvement project, or both.

In addition to cleaning the water, the oyster reefs help blunt the force of incoming waves.

"They are nice speed bumps," said Meredith Comi, an official with the Baykeeper group.

Environmentalists say "living shorelines" including oyster colonies are far preferable to, and cheaper than, armoring the coast with steel sea walls or wooden bulkheads that invariably accelerate erosion of the sand in front of such manmade structures.

"Waves are affected by the roughness of the bottom," said Boze Hancock, a marine restoration scientist with The Nature Conservancy who has studied and participated in oyster projects around the world.

"Picture a wave trying to roll over a huge sponge, compared to one rolling over an asphalt parking lot. The 'sponge,' or rough, uneven oyster reef, sucks the energy out of the wave as it rolls toward the shore."

U.S. Rep. Frank Pallone Jr., a New Jersey Democrat, recently introduced The Living Shorelines Act, which would make coastal communities eligible for \$100 million over five years in federal grants for oyster reefs and wetlands plants. Its prospects remain uncertain in the Republican-controlled Congress.

In most spots, the oysters are designed not to be harvested and eaten. But in other places, including New Jersey, the oysters have been planted in polluted waterways where shellfish harvesting is prohibited, leading to concerns about poachers stealing them and sickening customers.

Such a dispute forced Baykeeper to rip out an oyster reef it planted a few miles from the Navy pier and relocate the shellfish to waters near the pier that are patrolled by gun-toting boats.

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